

AN 1998:473216 CAPLUS

DN 129:209080

~~TI Efficient XeI* excimer ultraviolet sources from a dielectric barrier discharge~~

AU Zhang, Jun-Ying; Boyd, Ian W.

CS Department of Electronic and Electrical Engineering, University College
London, Torrington Place, London, WC1E 7JE, UK

SO Journal of Applied Physics (1998), 84(3), 1174-1178

CODEN: JAPIAU; ISSN: 0021-8979

PB American Institute of Physics

DT Journal

LA English

AB A dielec. barrier discharge in mixts. of xenon and iodine to provide intense narrow band UV radiation at $\lambda = 253$ nm (XeI*) was studied. The characteristics of the emission spectra of the excited dimer (excimer) and UV intensity formed from mixts. of xenon and iodine for different total gas pressures are reported. The abs. UV output power of the XeI* lamp was detd. using actinometry based on the photohydrate of uridine. The elec. power dependence of the UV intensity generated as well as the conversion efficiency of the lamps also was studied. Conversion efficiencies (from input elec. to output optical energy) $\geq 22.5\%$ were achieved for an elec. power input of 70 W, with 15.75 W of optical output being generated.

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AN 1997:663032 CAPLUS
DN 127:338959
TI The development of a silent discharge-driven XeBr* excimer UV
light source
AU Falkenstein, Zoran; Coogan, John J.
CS Chemical Science and Technology Division, Los Alamos National Laboratory,
CST-18, Los Alamos, NM, 87545, USA
SO Journal of Physics D: Applied Physics (1997), 30(19), 2704-2710
CODEN: JPAPBE; ISSN: 0022-3727
PB Institute of Physics Publishing
DT Journal
LA English
AB The authors present the optimization of a silent discharge-driven
XeBr* excimer UV light source. The radiant power and
emission efficiency were measured as functions of the gas gap, partial
pressure of Br2 and total Xe plus Br2 pressure for uncooled lamps
driven by a sinusoidal voltage. Approx. 90% of the lamp output
was in the B-X transition at 282 nm. The optimal lamp
performance was measured with a gap spacing of 7.5 mm and a 150 torr
filling of 0.15% Br2 in Xe. For the optimized system, UV prodn.
efficiencies, including losses in the screen electrode, exceeded 7.5% and
UV output power densities of 10 mW cm-2 were measured at a driving
frequency of 15 kHz.

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AN 1998:309847 CAPLUS

DN 129:46883

TI ~~Continuous-wave emission in the ultraviolet from diatomic excimers in a microdischarge~~

AU Frame, J. W.; John, P. C.; DeTemple, T. A.; Eden, J. G.

CS Department of Electrical and Computer Engineering, Everitt Laboratory,
University of Illinois, Urbana, IL, 61801, USA

SO Applied Physics Letters (1998), 72(21), 2634-2636

CODEN: APPLAB; ISSN: 0003-6951

PB American Institute of Physics

DT Journal

LA English

AB Emission on the I2 (D' A'), XeI (B2.SIGMA.1/2+ X2.SIGMA.1/2+) and XeO (2 3.PI. 1 3.PI.) bands, peaking in the UV at 342, 253 and 238 nm, resp., was generated on a continuous basis in a microdischarge with a static gas fill. Discharges are produced in Kr/I2, Xe/I2, or Xe/O2 gas mixts. by cylindrical devices 400 .mu.m in diam. and fabricated in Si. Rare-gas-halide and -oxide microdischarge lamps are attractive UV or vacuum UV sources and XeI, in particular, appears to be a potential replacement for Hg resonance line radiation (253.7 nm).

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AN 2000:608262 CAPLUS
DN 134:34781

TI ~~Capacitive discharge excilamps~~

AU Sosnin, Edward A.; Erofeev, Mikhail V.; Panchenko, Alexei N.; Lomaev,
Mikhail I.; Skakun, Victor S.; Shitz, Dmitrii V.; Tarasenko, Victor F.
CS High Current Electronics Institute, Tomsk, Russia

SO Proceedings of SPIE-The International Society for Optical Engineering (
2000), 3933 (Laser Applications in Microelectronic and
Optoelectronic Manufacturing V), 425-431
CODEN: PSISDG; ISSN: 0277-786X

PB SPIE-The International Society for Optical Engineering

DT Journal

LA English

AB Study was made of the characteristics of XeCl, KrCl and XeI
capacitive discharge excilamps. High efficiency of exciplex mols. and
simple design were obtained under capacitive HF discharge excitation.
Cylindrical excilamps with radiation output through side surface of the
cylinder and through 1 or 2 windows placed on the tube ends were
developed. High UV radiation power and elec. power deposition to
fluorescence conversion resulted in efficiencies of up to 12%. The study
of XeCl, KrCl and XeI excilamps showed, that it is possible to
create sealed-off samples with lifetime >1,000 h. The stability of output
parameters of the capacitive discharge excilamps is studied and the
mechanism of Cl losses in low pressure halogen contg. excilamps made of
quartz was detd. The possibility of creation of capacitive discharge
excilamps with short pulse duration was studied. In capacitive discharge
cylindrical KrCl-excilamp, at $\lambda \approx 222$ nm the radiation pulse
power up to 2.5 kW was obtained. Powerful radiation pulses 50 ns in
duration were obtained at pulse repetition rate of 1 kHz.

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ALL CITATIONS AVAILABLE IN THE RE FORMAT

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AN 1999:711834 CAPLUS
DN 132:28369

~~TI Sealed efficient excilamps excited by a capacitive discharge~~

AU Lomaev, M. I.; Skakun, V. S.; Sosnin, E. A.; Tarasenko, V. F.; Shits, D. V.

CS Institute of High-Current Electronics, Siberian Branch of the Russian Academy of Sciences, Tomsk, Russia

SO Technical Physics Letters (Translation of Pis'ma v Zhurnal Tekhnicheskoi Fiziki) (1999), 25(11), 858-859

CODEN: TPLEED; ISSN: 1063-7850

PB American Institute of Physics

DT Journal

LA English

AB The development of sealed XeCl (λ ..apprx.308 nm), KrCl (λ ..apprx.222 nm), and XeI (λ ..apprx.253 nm)

excilamps excited by a capacitive radiofrequency discharge is reported. Highly efficient emission of exciplex mols. is achieved under capacitive discharge excitation and the emitter has a simple design. An av. emission power of 3 W was obtained with a .apprx. 12% efficiency and the lifetime of the sealed excilamps was longer than 1000 h.

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ALL CITATIONS AVAILABLE IN THE RE FORMAT

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